

**IN THE CLAIMS**

**The following claim listing replaces all prior listings and versions of the claims:**

**COMPLETE LISTING OF THE CLAIMS:**

1. (Currently amended) A system for implementing a virtual solar cell, comprising:  
a data detector, including a measurement an insolation sensor, [[and]] adapted to collect  
external environment data;  
a controller configured to receive for receiving real-time data from one of the data  
detector and a user based on an operating mode, to classify classifying the received data in a  
predetermined format, to transmit the classified data to a data logger logging unit, to generate  
generating a voltage-current model having the same effect as that of an actual solar cell on the  
basis of the received data, and to generate generating a pulse width modulation signal for  
controlling a power converter according to the voltage-current model[[;]],

wherein:

the power converter for converting is adapted to convert input power in response to the  
pulse width modulation signal to provide power to a load[[;]], and

the data logger logging unit for communicating is adapted to communicate with the  
controller or the data detector and to store the according to a predetermined communication  
method, and storing data received from the controller or the data detector.

2. (Currently amended) The system for implementing a virtual solar cell as claimed in  
according to claim 1, wherein the data detector further includes a unit cell solar battery.

3. (Currently amended) The system for implementing a virtual solar cell as claimed in  
according to claim 1, wherein the measurement sensor includes data detector comprises at least

one of a temperature sensor, ~~insolation sensor or~~ and a wind velocity sensor.

4. (Currently amended) The system ~~for implementing a virtual solar cell as claimed in~~ according to claim 1, wherein the data ~~logger logging unit~~ classifies data by ~~at least one of a time,~~ ~~a place and a solar cell manufacturer manufacturers~~ to store the data.

5. (Currently amended) The system ~~for implementing a virtual solar cell as claimed in~~ according to claim 1, wherein the controller ~~is further configured to generate generates~~ the voltage-current model on the basis of the real-time data received from the data detector or ~~from~~ previously stored data received from the data ~~logger logging unit~~.

6. (Currently amended) A method for implementing a virtual solar cell, comprising:  
~~allowing a controller to receive data from the outside;~~  
receiving external environmental data from one of a data detector and a user interface  
based on an operating mode;  
classifying the received data in a predetermined format ~~or stores it;~~  
generating a voltage-current model for obtaining an output characteristic of an actual solar cell on the basis of the received data;  
performing a current control according to the generated voltage-current model;  
generating a pulse width modulation signal according to a result of the performed current control; and  
controlling a power converter in response to the pulse width modulation signal.

7. (Currently amended) The method ~~for implementing a virtual solar cell as claimed in according to claim 6, wherein the external environmental data received by the controller includes at least one of a temperature data, an insolation data and an output characteristic data of a unit the actual solar cell.~~

8. (Currently amended) The method ~~for implementing a virtual solar cell as claimed in according to claim 6, wherein, in the step of classifying comprises classifying the received data or storing the data, the data is classified by at least one of a time, a place and a solar cell manufacturer and stored, the method further comprising:~~  
storing the classified data.

9. (Currently amended) The method ~~for implementing a virtual solar cell as claimed in according to claim 6, wherein in the step of generating the a voltage-current model, the controller generates comprises generating the voltage-current model on the basis of one of a real-time data received from a data detector or arbitrary data inputted by a user through a predetermined method.~~

10. (Currently amended) The method ~~for implementing a virtual solar cell as claimed in according to claim 9, wherein the arbitrary data inputted by the user comprises inputting data using predetermined method is a method of inputting data through a user interface screen.~~

11. (New) The system according to claim 1, wherein the controller is further configured to generate the voltage-current model on the basis of one of a real-time data received from the  
{P24344 00170706.DOC}

data detector or arbitrary data inputted by a user.

12. (New) The system according to claim 11, wherein the arbitrary data inputted by a user comprises at least one of a temperature data, insolation data, a voltage data, a current data, an open voltage data, and a short-circuit current.

13. (New) The system according to claim 12, wherein the short-circuit current corresponds to a maximum point data.

14. (New) The system according to claim 1, wherein the real-time data inputted by a user comprises at least one of a temperature data, an insolation data, a voltage data, a current data, an open voltage data and a short-circuit current data.

15. (New) A method for implementing a virtual solar cell in one of two modes, a first mode including implementing the virtual solar cell on a basis of at least one of an actually determined temperature, insolation and manufacturer, a second mode including implementing the virtual solar cell on a basis of at least one of a temperature data, an insolation data and a manufacturer data input in real-time by a user, the method comprising:

receiving environmental data from one of a data detector and a user interface;

classifying the received data in a predetermined format;

generating a voltage-current model for obtaining an output characteristic of an actual solar cell on the basis of the received data;

performing a current control according to the generated voltage-current model;

generating a pulse width modulation signal according to a result of the performed current control; and

controlling a power converter in response to the pulse width modulation signal.